Bombay Hook National Wildlife Refuge
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U.S. Fish & Wildlife Service
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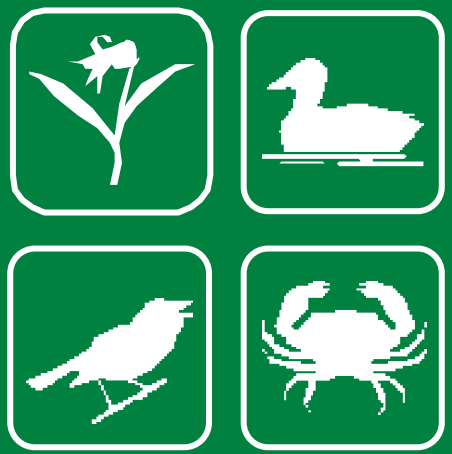
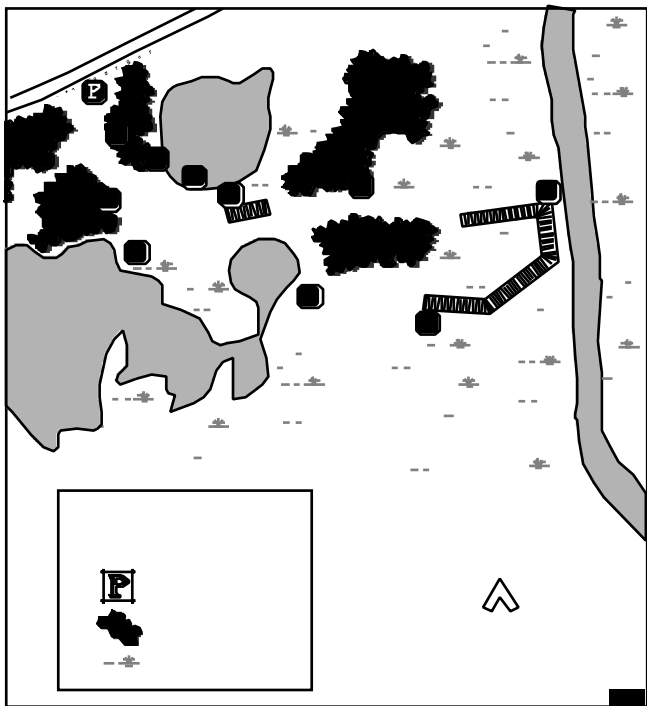
Boardwalk Trail

Bombay Hook National Wildlife Refuge



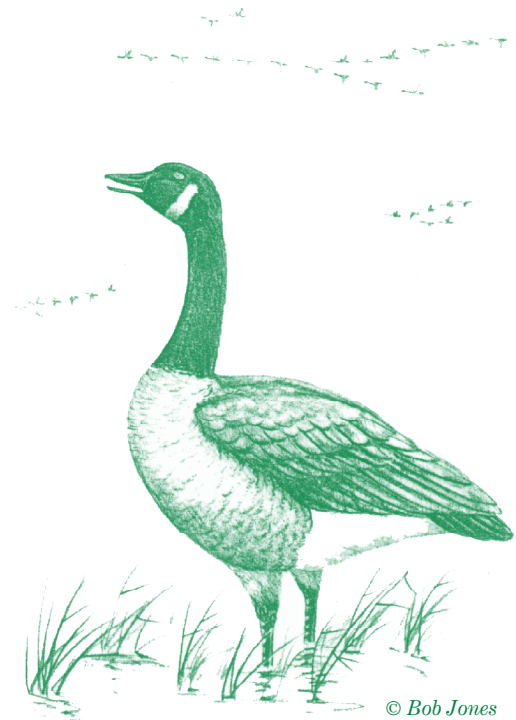
Welcome

Welcome to Bombay Hook National Wildlife Refuge. The Boardwalk Trail passes through four different refuge habitats: woodland, freshwater pond, brackish pond, and saltmarsh. The trail is about one-half mile long and will take you about 30 minutes to complete.



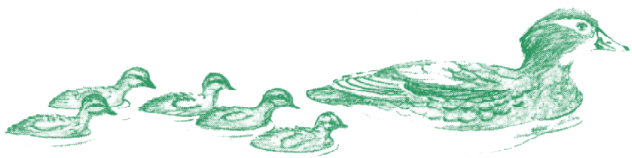
1

Each season brings changes along the Boardwalk Trail. In spring, many low plants grow and reproduce before leaves appear on the trees, making this an excellent time for sighting songbirds. During the late spring and summer months, shady woods along the Boardwalk Trail provide a home for many wildlife species which alert visitors may notice. Warmer weather also increases the number of ticks, mosquitoes, and flies along the trail. When insects are present, most visitors feel comfortable wearing a long-sleeved shirt, slacks, and insect repellent, but headnets are sometimes needed. During the fall, leaves change color and many wildlife species prepare for winter. The winter season helps create different patterns, shapes, textures, and colors along the trail. Many animals and birds remain active all winter and may be easily seen as their search for food intensifies.



2

There are three types of wetland habitats at Bombay Hook Refuge. Freshwater habitat may be recognized by the lily pads and frogs living there. In brackish water habitat, transition plants such as three square and other bulrushes *(Scirpus sp.)* can be seen. The pond you see at this stop is brackish. In saltmarsh habitat, vegetation consists mostly of cordgrasses *(Spartina cynosuroides, S. patens, S. alterniflora)* and spike grass or saltgrass *(Distichlis spicata)*. The saltmarsh at Bombay Hook becomes more salty during droughts, and becomes less salty during and immediately after heavy rain. Ocean water is always more salty than the saltmarsh at Bombay Hook.



Notice the wood duck box near the edge of the pond. Although wood ducks usually nest in tree cavities, they will use man-made nests if hollow trees are not available. The cone skirt under the box prevents predators such as snakes or raccoons from getting into the nest and destroying eggs or young ducklings. Wildlife managers maintain many nest boxes to increase the number of wood ducks produced at Bombay Hook Refuge. If you own similar habitat, you can help wildlife by installing your own nest boxes.

3

Careful management of Bombay Hook wetlands benefits man as well as wildlife. Some of these benefits include: nesting, migration, and wintering habitat for waterfowl, shorebirds, and other wildlife (such as river otters, rare fur-bearers in Delaware); habitat for marine and freshwater fish; water pollution and sediment control; saltwater intrusion control, reduction of coastal storm damage; and recreational, educational, and scientific uses.

Many trees in this area are persimmon trees, an important food source for wildlife such as raccoons, foxes, and opossums. Persimmon fruit is round, smooth and orange, and remains on the tree long after the leaves have fallen. Persimmon tree bark is rugged and corrugated and looks a lot like alligator skin.

Japanese honeysuckle, introduced into the United States in 1898, is found in patches along this section of the trail. This plant spreads rapidly, and can dominate and shade out native plants. The flowering vine and its berries, however, are a good food source for game birds, songbirds, rabbits and deer.

Another plant, Phragmites (or common reed), unlike the Japanese honeysuckle, has very little wildlife value. Phragmites crowds out other more beneficial plants such as cattails, pond lilies, bulrushes, and smartweed in freshwater areas, and cordgrasses in saltwater areas. Refuge managers are controlling Phragmites with water level manipulation and herbicides in late summer followed by burning during the winter months. Individual sites are treated for two consecutive years. Because this process destroys the root system of Phragmites, preferred wildlife plants can regrow without competition.

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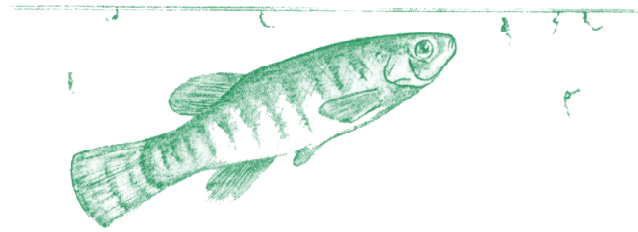
4

If you stand on the short boardwalk and look to your left, you may see poison ivy plants entangled with marsh reeds. The white berries produced by this plant can often be seen along the Boardwalk Trail during the fall and winter months. Although poison ivy berries provide food for pheasants, quail, catbirds, flickers, finches and sparrows, humans can catch a severe rash from handling the berries, the leaves, or even the hairy vine.



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During the warm months, sheepshead minnows, mummichogs and killifish may be seen in the water under and adjacent to the boardwalk. If you are a quiet observer, you may also see northern water snakes sunning themselves here.

5

This woodland area contains several sweetgum trees, an early successional species. Sweetgums are medium-sized trees with star-shaped leaves, winged corky bark, and a large prickly fruit smaller than a golf ball and brown when ripe.

You may also see wild cherry trees in this area. Older cherry trees develop a rough, shaggy, dark bark, while younger trees can be identified by the lenticels or lines in the bark. Birds and mammals prefer cherries over the fruit produced by the sweetgum tree.

Near the boardwalk are many bayberry and wax myrtle bushes, whose berries are popular with songbirds. Humans have used the waxy coating of the berries to make candles and scent soaps.

This is a high marsh, made up mostly of salt meadow cordgrass *(Spartina patens)*, saltmarsh cordgrass *(Spartina alternaflora),* or salt grass *(Distichlis spicata)*. This marsh type is only flooded during spring tides or by major storms. The major low marsh species is saltmarsh cordgrass *(Spartina alterniflora)*. Low marshes are flooded during every high tide, normally twice per day.

If the tide has gone out, you may see small fiddler crab holes in the mud during warm weather. Fiddler crabs are smaller than the familiar blue crab which is abundant in many local tidal marshes. Male fiddler crabs have one claw larger than the other. Marsh crabs may also be found here, along with many different species of waterbirds and shorebirds that use the marsh for feeding and resting. The mounds you see in the saltmarsh are muskrat houses, made of mud and vegetation. Some visitors mistakenly think they are beaver lodges. Beaver lodges, however, are not found in the saltmarsh, but in freshwater only and consist of mud and sticks. Muskrats are mainly vegetarians, although they may eat clams, fish, crayfish and snails. Raccoon scat, or droppings, can often be seen on the boardwalk. The scat usually contains persimmon tree seeds, other seeds, and the remains of fiddler crabs. Look for raccoon tracks in the marsh mud along the sides of the boardwalk and along the railing.

Wetlands are ideal places for nesting ducks. Ducks that nest at Bombay Hook Refuge include black ducks, mallards, blue-winged teals, gadwalls, and shovelers. To help save ducks and geese, the Migratory Bird Hunting Stamp Act was passed by Congress in 1934. Today this is known as the Federal Duck Stamp Program. Money from duck stamps purchased by waterfowl hunters, conservationists, stamp collectors and visitors for refuge entrance provides funding for the acquisition and leasing of wildlife refuges. Today, 3.7 million acres of wetland refuges are preserved for North American waterfowl and other wildlife. Many of the more than 500 national wildlife refuges in the United States were purchased in whole or in part with money from the sale of Duck Stamps.

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8

The wooden structure seen from here is a deer stand used by hunters. Deer hunting is permitted at Bombay Hook Refuge to control deer population numbers and to provide a form of wildlife-oriented recreation. These elevated deer stands are located in the headquarters hunt area and the regular deer hunt area. Six hunt sites are reserved for hunters in wheelchairs. If you would like to hunt at Bombay Hook, check at the refuge office before you leave today.

9

This pond is one of the best spots along the Boardwalk Trail to see waterfowl in the fall and shorebirds in the spring. Waterfowl often sighted include black ducks, gadwalls, blue-winged teals, and mallards. Willets, yellowlegs, and dowitchers are the most common shorebirds seen. The saltmarsh is a nesting area for willets. To help ensure that healthy populations of ducks, geese and swans will exist in the future, the United States, Canada and Mexico signed the North American Waterfowl Management Plan in 1986. The Plan establishes population goals for waterfowl through the year 2000, and gives special attention to species with declining populations. The Plan identifies habitat conservation needs in these regions, and encourages international cooperation by these countries where many waterfowl populations spend the winter. The North American Plan is a bold step which needs the support of private citizens as well as government agencies if its goals are to be reached and maintained.

10

We hope you enjoyed your walk along the Boardwalk Trail. This trail was built by members of the Youth Conservation Corps in 1973. Now volunteers maintain the trail. Trail and maintenance projects include laying down wood chips to prevent erosion, outlining the trail with logs, and clearing brush growing onto the trail. If you would like to become a volunteer at Bombay Hook Refuge, please ask at the refuge office before you leave today.

After walking the Boardwalk Trail, you may realize that wetlands have many values. Wetland values include wildlife resting, feeding, and production; ground water replenishment; pollution and sediment control; flood prevention; educational and scientific uses; recreation and esthetics. Healthy wetlands provide benefits for everyone. Please do your part to protect them.

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